UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,741	01/11/2001	Vincent Leroux	1366 US	9031

25105 7590 05/07/2003

VESUVIUS CRUCIBLE COMPANY
27 NOBLESTOWN RD
CARNEGIE, PA 15106-1632

EXAMINER	
DICUS, TAMRA	

ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-9

Office Action Summary	Application No.	Applicant(s)	
	09/758,741	LEROUX ET AL.	
	Examiner	Art Unit	
	Tamra L. Dicus	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The finality is withdrawn due to interview.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,350,609 to Bouchemousse.

3. Bouchemousse teaches a refractory article with an insulating coat and fired ceramic. The insulating core layer (3) has a vitreous silica (glaze) external layer over it (1) and a first outer surface of ceramic layer (5). See Figure 2. The article is also fired, which inherently produces a glaze. Also see col. 1, lines 20-25, lines 45-55, col. 2, lines 45-60, Figure 2, col. 3, lines 10-35, and col. 4, lines 5-10.

4. Claims 1-3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,691,061 to Hanse et al.

5. Hanse teaches a refractory shape having a coating. The body is of a refractory material (2) having a layer (10) that covers the body partially or completely that is oxidized, also comprising a slagline collar (8) that functions as an insulative coating, with a layer of glaze (3) which has the purpose of preventing oxidation of the refractory material during preheating and use. See col. 4, lines 25-40. The material contains carbon, a binder, and alumina at col. 4, lines 45-50. Figures 1 and 6 show a nozzle, thin and curved.

6. Claims 1-2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,370,370 to Benson.

7. Benson discloses a carbon-bonded, oxide refractory body in the form of a nozzle for use in casting molten metal, such as aluminum-killed steel (see col. 5, line 12+), where the exterior body surface is coated with a glaze of a glass forming frit material (see col. 6, line 20+). Benson discovered that a carbon-bonded, oxide refractory material such as carbon-bonded alumina graphite in the form of a nozzle can be used to form an anti-buildup liner which is resistant to carbon monoxide gas and resistant to the formation and buildup of alumina (see col. 5, line 12+). Benson applies a glaze to the body to protect the exterior surface of the body against oxidation during firing of the nozzle (see col. 6, line 24+).

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,908,577 to Yamamura et al.

9. Yamamura teaches a nozzle for continuous casting of molten metal. The nozzle body 10 has a first surface (encompasses thin-slab nozzle of claim 4), the inner wall part 11 is over 10. The inner wall acts as an insulative coating. Yamamura teaches the green ceramic body is fired, inherently producing a glaze over 11 at col. 9, lines55-60.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,908,577 to Yamamura et al. in view of USPN 4,559,270 to Sara and USPN 5,252,526 to Whittemore.

12. Yamamura teaches a nozzle for continuous casting of molten metal. The nozzle body 10 has a first surface (encompasses thin-slab nozzle of claim 4), the inner wall part 11 is over 10. The inner wall acts as an insulative coating. Yamamura teaches the green ceramic body is fired, inherently producing a glaze over 11 at col. 9, lines55-60. Yamamura is silent to the nozzle comprising a carbon-bonded refractory composition. However Sara teaches an oxidation prohibitive coating (composition resistant to oxygen diffusion of claim 6) for carbonaceous articles. Sara uses 15 to 35 % by weight SiC (carbon-bonded composition) and 17.4 % by weight water at col. 5, lines 1-5, as a slurry coating that may be glazed on a refractory article. Also a binder (sodium silicate) within the range 8 to 11 wt % are conventional percentages to add to a refractory composition at col. 4, lines 30-35. See col. 1, lines 20-25, col. 2, lines 20-30, col. 4, lines 10-40, Example 1, and col. 3, lines 45-48. Hence, it would have been obvious to one of ordinary skill in the art to modify the nozzle of Yamamura to include carbon-bonded composition for the purpose of protecting the refractory from oxidation as taught by Sara at col. 2, lines 15-20 and col. 4, lines 35-45. To add water for the purpose of applying a composition as a slurry in order to be dipped in, brushed, or sprayed on surfaces as taught by Sara at col. 4, lines 15-25. To add a binder in the range between 0.5-15 wt % because Sara teaches the range 8 to 11 wt % are conventional percentages to add a binder to a refractory composition at col. 4, lines 30-35.

13. Regarding the remainder compounds, Whittemore teaches adding 5 to 15 % alumina (metal), and 5 to 25 wt % microspheres at col. 2, lines 20-40. The microspheres are used to reduce cost. The alumina (metal) is added between 5 to 15 wt % , within claimed range. Hence it would have been obvious to one of ordinary skill in the art to modify the nozzle of Yamamura to include microspheres to reduce cost and the metal because it is conventional to add for bonding as taught by Whittemore at col. 2, lines 20-40.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tamra L. Dicus
Examiner
Art Unit 1774

May 5, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700